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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,621	02/27/2004	Christopher J. Kowalsky	DKT03160	6497
42595	7590	05/11/2005	EXAMINER	
BORGWARNER INC. PATENT DEPARTMENT 3850 HAMLIN ROAD AUBURN HILLS, MI 48326-2872			BONCK, RODNEY H	
			ART UNIT	PAPER NUMBER
			3681	

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/788,621	KOWALSKY ET AL.	
Examiner	Art Unit		
Rodney H. Bonck	3681		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 27 February 2004.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-23 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 27 February 2004 is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06/17/04.
4) Interview Summary (PTO-413) .
Paper No(s)/Mail Date. ____ .
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____ .

DETAILED ACTION

The following is a first action on the merits of application Serial No.10/788,621, filed February 27, 2004.

Information Disclosure Statement

Receipt is acknowledged of the Information Disclosure Statement filed June 17, 2004. The cited documents have been considered.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **230** (mentioned in paragraph [0029] of the specification). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This claim depends from claim 17 but repeats the language of claim 17. It is unclear from the claim whether "a wrap spring", "a cylindrical passageway", "a drive hub", and "a driven pinion" are the same as "a wrap spring", "a cylindrical passageway", "a drive hub", and "a driven pinion" already recited in claim 17, or are additional elements.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6-8, 13-15, and 21-23 are rejected under 35 U.S.C. 102(a) as being anticipated by Bansbach et al. ('338). The Bansbach et al. device is an electrohydraulic clutch assembly comprising an input member 50, a coaxially disposed output member

54, a bi-directional electric motor 92, a gear train 94 having an input 114 driven by the motor and an output 112, a ball screw 90 driven by the output and driving a first piston 118, a second piston 82 translated by hydraulic fluid, and a friction clutch pack 70 actuated by the second piston. As seen in Fig. 2 of Bansbach et al., the friction clutch pack includes first and second clutch plates 72, a circular apply plate 76, and a thrust bearing 128. As seen in Fig. 5 of Bansbach et al., the output of the clutch provides torque to a differential 32 in a motor vehicle driveline.

Claims 1, 4, 8, 11, 15, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Shaw et al.(US 2002/0162328 A1). The Shaw et al. device discloses an electrohydraulic clutch assembly that would inherently have an input member and an output member. Shaw et al. show a bi-directional electric motor 146, a gear train 150 having an input driven by the motor and an output, a ball screw 148 driven by the output and driving a first piston 158, a second piston 172 translated by hydraulic fluid, and a friction clutch pack 166 actuated by the second piston. A pressure sensor is provided at 174 for providing a signal representing a pressure of hydraulic fluid generated by the first piston.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 8-12, 15-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al.(US 2002/0162328 A1) in view of Maehara et al.('407). As noted above, the Shaw et al. device discloses an electrohydraulic clutch assembly that would inherently have an input member and an output member. Shaw et al. show a bi-directional electric motor 146, a gear train 150 having an input driven by the motor and an output, a ball screw 148 driven by the output and driving a first piston 158, a second piston 172 translated by hydraulic fluid, and a friction clutch pack 166 actuated by the second piston. A pressure sensor is provided at 174 for providing a signal representing a pressure of hydraulic fluid generated by the first piston. Even if the clutch assembly of Shaw et al. were not considered to inherently have an input and output, providing an input and output for the clutch would have been obvious from Maehara et al. In a similar device Maehara et al. show an electrohydraulic clutch

assembly 30 that has an input 16 and an output that drives shaft 19. It would have been obvious to provide an input and an output for the clutch 166 of Shaw et al., the motivation being to permit selective transmission of torque to the secondary shaft. Maehara et al. also teach providing a means for inhibiting back driving of the electric motor 2200 (see Figs. 12(a) and 12(b)). The means comprises a wrap spring 3100. It would have been obvious to provide means for inhibiting back driving in Shaw et al., the motivation being to permit the actuator to maintain its engaged position without continuously driving the motor. Providing for lost motion in the inhibiting means is also taught by Maehara et al. in Fig. 12(b). Shaw et al. provide a control device 176 and Maehara et al. provide a controller 50. It would have been obvious to employ a microprocessor in these control units, the motivation being to process sensor input signals to control the motor.

Claims 5, 12, and 20 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Shaw et al.(US 2002/0162328 A1) in view of Maehara et al.('407) as applied to claims 1, 8, and 15 above, and further in view of Bates('432). Even if using a microprocessor for the control device 176 of Shaw et al. were not obvious from Maehara et al., using a microprocessor would have clearly been obvious from Bates, which teaches using a microprocessor based central processing unit for controlling the electric motor in a similar electrohydraulic actuator.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matouka et al.('237) shows a means to inhibit back driving of a motor in an electrohydraulic actuator. Werba(US 2004/0066552 A1) is cited for its teaching that DC motors and stepper motors are bi-directional. Takeyama('546) discloses computer control of an electrohydraulic actuator. Fuller et al.('193) discloses microprocessor control of an electrohydraulic actuator and discloses means to inhibit back driving of a motor in an electrohydraulic actuator (Figs. 2 and 3).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney H. Bonck whose telephone number is (571) 272-7089. The examiner can normally be reached on Monday-Friday 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on (571) 272-7095. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rodney H. Bonck
Primary Examiner
Art Unit 3681

rhb
May 6, 2005